Instructor:	Masahiro Nakahara	**Time:**	MWF 11:00-11:50AM
Office:	40 Herman Brown	**Classroom:**	Humanities (HU) 118
Email:	`mn24@rice.edu`	**Office Hours:**	M 5PM-6PM, Th 1:00-2:00PM

Class Webpage: Look for `Math 101 004 F14` on Owlspace

Recitations: There are three TA sessions for this course:

Time:	M 7-9PM	**Classroom:**	HBH 427
Time:	W 7-9PM	**Classroom:**	HBH 227
Time:	Th 7-9PM	**Classroom:**	HBH 227

Text: James Stewart: *Calculus Early Transcendentals 7E.* We will cover chapters 1 through 6. The bookstore has a custom-made bundle for Rice (ISBN 13: 978-1-28-590506-8), *which includes a webAssign account.* The book was designed to minimize costs for you (provided you want a paper copy of the book). You can also use Stewart's Single Variable Calculus: Early Transcendentals (7th Edition) or Stewart's Calculus: Early Transcendentals (7th Edition), but you will have to purchase a webAssign account separately.

Homework: There are **two** components to the homework: webAssign and problems to be handed in.

1. WebAssign Homework will be due **every class day at 9:00PM** (starting on Friday, August 29th). It will be assigned through the WebAssign website. Each student needs to sign up for a WebAssign account and get familiar with WebAssign as soon as possible. Most homework problems are to be completed online, and are quite similar to textbook exercises.

   The `webAssign.net` key for this course is: **rice 1296 8638**.

   It is **strongly recommended** that you keep a notebook where you write down complete solutions to the assigned exercises; you can use this notebook to study for exams. Imagine that a fellow student will be reading your homework notebook to study for an exam. If your work is not detailed enough to be useful, it is unlikely to earn much credit if it were being graded. Another student reading your solutions should be able to guess at the question your are trying to answer without referring to the textbook.

2. Every week I will assign 6-8 problems from the text that you have to hand in on **Monday by 6:00pm in my office** (you are welcome to hand them in at the beginning of lecture on Monday as well). There is one exception to this rule: the first such set of problems will be due on **Webnesday September 3rd**, due to the Labor Day holiday. These problems will be of a nature that cannot be covered by online systems. They will be graded and returned to you a week after you hand them in.

The homework is not pledged and you can collaborate with other students in the class. Make sure you understand the solution to a problem before typing in your answer on WebAssign.

Late homework assignments will not be accepted for ANY reason – instead, your three lowest webassign scores and your lowest "paper-assignment" will be dropped.

Exams: There will be two midterm tests during the semester. They will take place on **Thursday, October 2nd at 7:00pm** and on **Tuesday, November 6th at 7:00pm**.

> **Final exam:** The date for the final exam is not available at this time. It is the policy of the Mathematics Department that no final may be given early to accomodate student travel plans. If you make travel plans that later turn out to conflict with the scheduled exam, then it is your responsibility to either reschedule your travel plans or take a zero in the final.

Books, notes, and calculators will **not** be allowed on exams. Make-up exams will be allowed only in the case of a documented medical emergency. If an exam conflicts with a holiday you observe, please let me know before the end of the first week of classes.

Grades: Your homework will count as 20% of your final grade (15% webAssign, 5% paper assignments). The other 80% of your grade will be the maximum of the following four values:

$$20\% \text{ Midterm I} + 20\% \text{ Midterm II} + 40\% \text{ Final}$$

$$25\% \text{ Midterm I} + 20\% \text{ Midterm II} + 35\% \text{ Final}$$

$$20\% \text{ Midterm I} + 25\% \text{ Midterm II} + 35\% \text{ Final}$$

$$25\% \text{ Midterm I} + 25\% \text{ Midterm II} + 30\% \text{ Final}$$

Expectations: I expect you to attend every class and to arrive on time. It is your responsibility to keep informed of any announcements, syllabus adjustments, or policy changes made during scheduled classes. Not all announcements will be posted on the website.

In my experience as a student, most people do not follow all the details of a lecture in real time. When you go to a Math lecture you should expect to witness the big picture of what's going on. You should pay attention to the lecturer's advice on what is important and what isn't. A lecturer spends a long time thinking on how to deliver a presentation of an immense amount of material; they do not expect you to follow every step, but they do expect you to go home and fill in the gaps in your understanding. Not attending lecture really hurts your chances at a deep understanding of the material.

Success: The most successful students tend to:

- Attend every class,
- Read the book and review their notes daily,
- Work on all the homework as it is assigned,
- Seek help as soon as they encounter trouble.

I encourage you to utilize your classmates, recitation sessions and office hours whenever you are having trouble understanding the course material. Get your questions answered as they arise – waiting until you have many questions (or until an exam is looming!) will make help in any form less effective.

Disability Support: Any student with a documented disability seeking academic adjustments or accommodations is requested to speak with me during the first two weeks of class. All such discussions will remain as confidential as possible. Students with disabilities will need to also contact Disability Support Services in the Allen Center

Tentative Schedule:

Week 1:
08/25 Section 1.1-2: Basics on functions
08/27 Section 1.3: Stretching, shifting and composing functions
08/29 Section 1.5: Exponential functions

Week 2:
09/01 No class, Labor Day
09/03 Section 1.6: Inverse functions and Logarithms
09/05 Section 2.1: Tangents and velocity problems

Week 3:
09/08 Section 2.2: The limit of a function
09/10 Section 2.3: Limit laws
09/12 Section 2.4: Epsilons and deltas

Week 4:
09/15 Section 2.5: Continuity
09/17 Section 2.6: Limits at infinity; horizontal asymptotes
09/19 Section 2.7: Derivatives

Week 5:
09/22 Section 2.8: Derivatives as functions
09/24 Section 3.1: Derivatives of polynomials and exponential functions
09/26 Section 3.2: Product and Quotient rules

Week 6:
09/29 Section 3.3: Derivatives of Trigonometric Functions
10/01, Review
THU, 10/02, 7-9PM First Midterm Exam
10/03 Section 3.4: The Chain Rule

Week 7:
10/06 Section 3.5: Implicit differentiation

10/08 Section 3.6: Derivatives of Logarithmic Functions
10/10 Section 3.7: Rates of change

Week 8:
10/13 No class, Midterm Recess
10/15 Section 3.8: Exponential Growth and Decay
10/17 Section 3.9: Related Rates

Week 9:
10/20 Section 3.10-11: Linear approximations and differentials; Hyperbolic functions
10/22 Section 4.1: Maximum and Minimum Values
10/24 Section 4.2: The Mean Value Theorem

Week 10:
10/27 Section 4.3: Derivatives and Graphs
10/29 Section 4.4: L'Hôpital's Rule
10/31 Section 4.5-6: Curve Sketching

Week 11:
11/03 Section 4.7: Optimization
11/05 Section 4.8: Newton's method
THU, 11/06 7-9PM Second Midterm Exam
11/07 Section 4.9: Antiderivatives

Week 12:
11/10 Section 5.1: Areas and Distances
11/12 Section 5.2: Definite Integration
11/14 Section 5.3: The Fundamental Theorem of Calculus

Week 13:
11/17 Section 5.4: Indefinite Integrals
11/19 Section 5.5: The Substitution Rule
11/21 Section 6.1: Areas between curves

Week 14:
11/24 Section 6.2: Volumes
11/26 Section 6.5: Average Value of a Function
11/28 No class, Thanksgiving

Week 15:
12/01 Section 6.3: Cylindrical Shells
12/03 Section 6.4: Work
12/05 Review, last day of classes